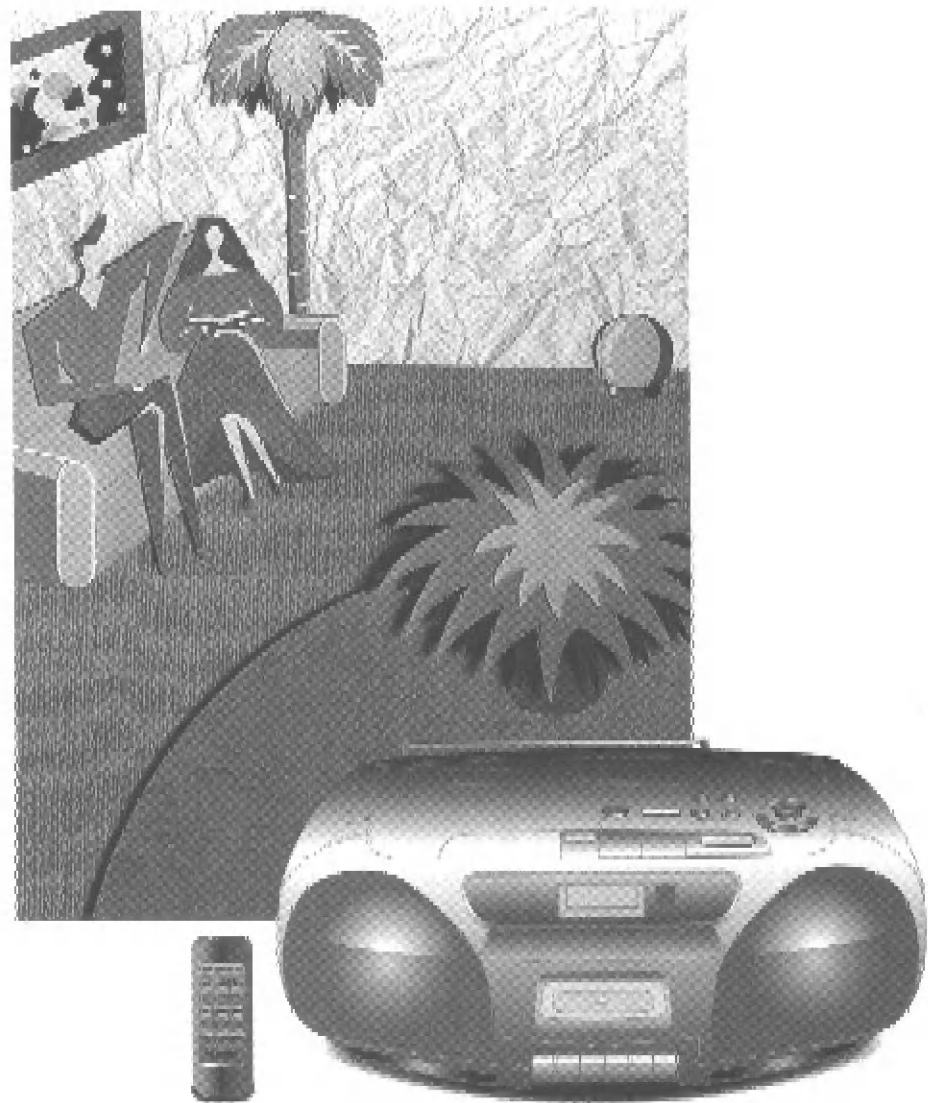


# Panasonic®

## Portable Stereo CD System RX-DS22

### Operating Instructions



Before connecting, operating or adjusting this product, please read these instructions completely. Please save this manual.

COMPACT  
**disc**  
DIGITAL AUDIO

1. **Power Source**—The unit should be connected to power supply only of the type described in the operating instructions or as marked on the unit.
2. **Polarization**—If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
3. **Power Cord Protection**—AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
4. **Nonuse Periods**—When the unit is not used, turn the power off. When left unused for a long period of time, the unit should be unplugged from the household AC outlet.

# Precautions

## Installation

### Environment

1. **Water and Moisture**—Do not use this unit near water—for example, near a bathtub, washbowl, swimming pool, or the like. Damp basements should also be avoided.
2. **Condensation**—Moisture may form on the lens in the following conditions...
  - immediately after a heater has been turned on.
  - in a steamy or very humid room.
  - when the unit is suddenly moved from a cold environment to a warm one.If moisture forms inside this unit, it may not operate properly. To correct this problem, turn on the power and wait about one hour for the moisture to evaporate.
3. **Heat**—The unit should be situated away from heat sources such as radiators and the like. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

### Placement

1. **Ventilation**—The unit should be situated so that its location or position does not interfere with its proper ventilation. Allow 10 cm (4") clearance from the rear of the unit.
2. **Foreign Material**—Care should be taken so that objects do not fall into and liquids are not spilled into the unit. Do not subject this unit to excessive smoke, dust, mechanical vibration, or shock.
3. **Magnetism**—The unit should be situated away from equipment or devices that generate strong magnetic fields.
4. **Stacking**—Do not place heavy objects, other than system components, on top of the unit.
5. **Surface**—Place the unit on a flat, level surface.
6. **Carts and Stands**—The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn.
7. **Wall or Ceiling Mounting**—The unit should not be mounted to a wall or ceiling, unless specified in this operating instructions.



## Maintenance

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution.  
Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

## Service

1. **Damage Requiring Service**—The unit should be serviced by qualified service personnel when:
  - (a) The AC power supply cord or the plug has been damaged; or
  - (b) Objects have fallen or liquid has been spilled into the unit; or
  - (c) The unit has been exposed to rain; or
  - (d) The unit does not appear to operate normally or exhibits a marked change in performance; or
  - (e) The unit has been dropped, or the enclosure damaged.
2. **Servicing**—The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to an authorized service personnel.

(Only for U.S.A.)

Call 1-800-545-2672 for the address of an authorized factory servicenter.

## Listening caution



Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

We recommend you to avoid prolonged exposure to excessive noise.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing.

Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in future. After all, we want you listening for a lifetime.

THE FOLLOWING PHRASES ARE APPLIED ONLY FOR U.S.A.:

### CAUTION:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Notice: This system complies with new Part 15, except for the radio receiver, which complies with old Part 15, Subpart C of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. The radio receiver is not subject to above item (2).

Any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

# Power Sources

## Supplied Accessories

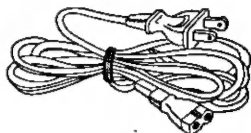


Please check and identify the supplied accessories.

(ONLY FOR U.S.A.)

To order accessories call MSC Accessory Dept. 1-800-332-5368.

- ☐ AC power cable (polarized) ..... 1 pc.  
(SJA172)

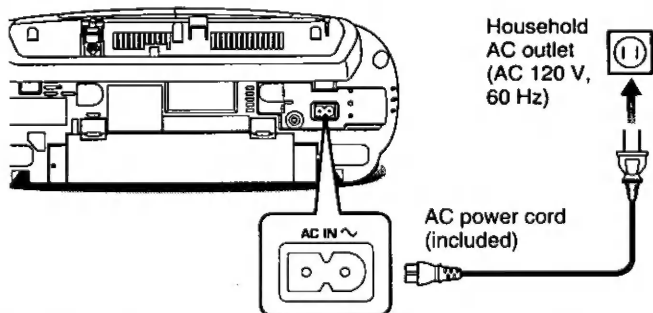


- ☐ Remote control transmitter ..... 1 pc.  
(EUR644550)



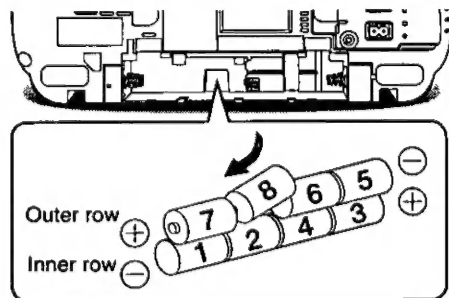
## Using a household AC outlet

Connect the included AC power cord to the AC socket of the unit and your household AC outlet.

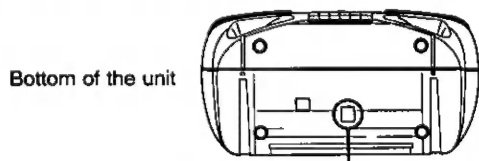


## Using batteries (not included)

Disconnect the AC power cable from the AC IN~ socket on the rear panel, and insert eight "D" size (R20/LR20, not included) batteries in the order numbered below.



### How to remove the batteries:



Insert your finger and push out the batteries

### When to replace the batteries:

#### When the batteries are weak:

- The display of the front panel will start to flash.
- The unit will automatically turn itself off, then "U01" will be appeared on the display.

In those cases, replace all batteries with new ones.

#### Note

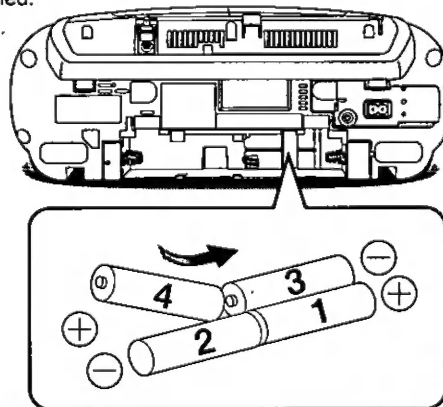
If the unit is not going to be used for a prolonged period of time when a household AC outlet is used to power it, disconnect the power cable to conserve power.

## Memory back-up batteries (four "AA" size)

In the event of a power failure, or if the AC power cable is disconnected from the household AC outlet (during AC operation), or should the batteries fail, the memory back-up batteries will preserve the preset memory of this unit.

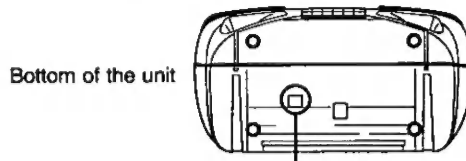
### Battery installation

Insert four "AA" size (R6/LR6, not included) batteries into the battery compartment, making sure that the batteries are installed in the designated numerical order and that the proper polarities are maintained.



- The life of the memory back-up batteries can be prolonged by keeping the AC power cable plugged in the household AC outlet at all times.
- When disconnecting the AC power cable, switch off the power first by pressing (POWER). The life of the memory back-up batteries is reduced if the AC power cable is disconnected from a household AC outlet with the power still supplied.

### Battery removal



Bottom of the unit

Insert your finger and push out the batteries

### Battery life

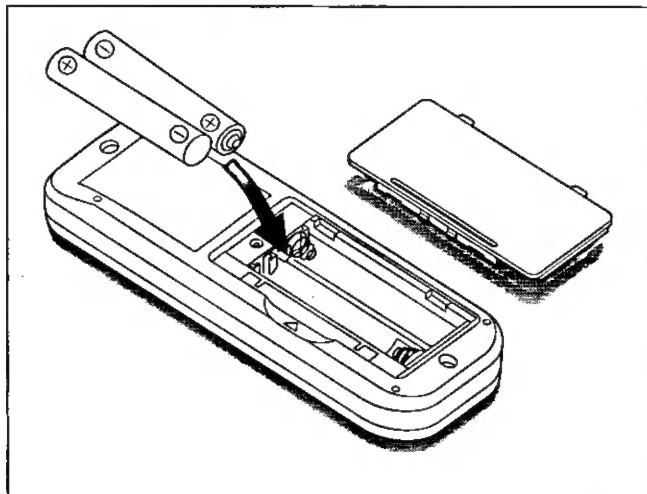
The life of the memory back-up batteries is about one year.

# Concerning the Remote Control

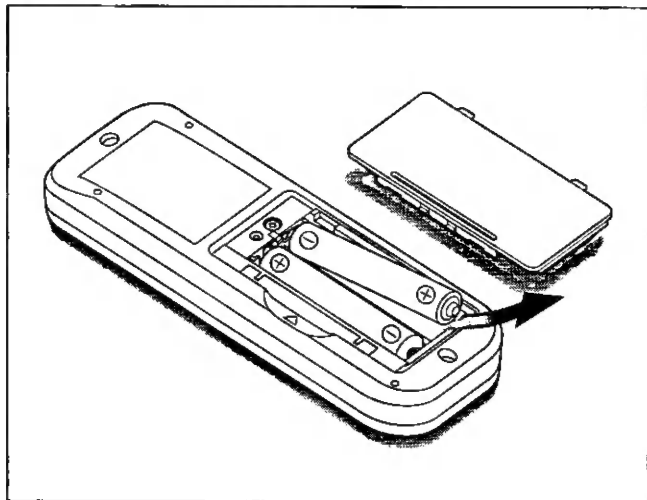
## Battery installation

Insert two "AAA" size [(R03/LR03), not included] batteries as shown below.

Insert the batteries in the correct polarities ( $\oplus$ ,  $\ominus$ ).



To remove the batteries, pull out the  $\oplus$  side.

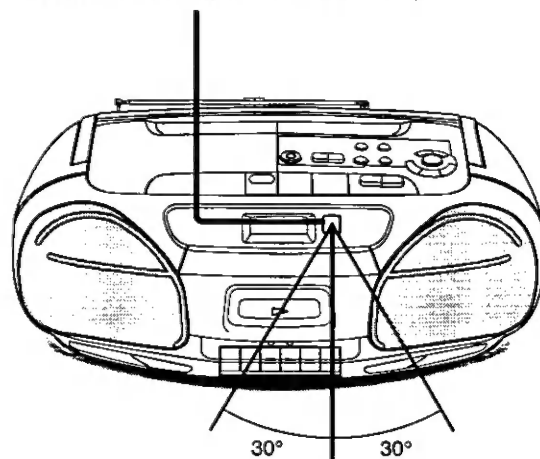


## Use of batteries

- Do not mix old and new batteries, or batteries of different types (manganese with and alkaline, etc.).
- Always remove old, weak or worn-out batteries promptly and dispose of them properly.
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- If a battery leaks, remove all batteries and dispose of them properly.
- Thoroughly clean the battery compartment before inserting new batteries.
- If the electrolyte comes into contact with skin or clothes, flush with water immediately.
- Keep batteries out of reach of children.
- Do not use rechargeable type batteries.
- Do not attempt to recharge alkaline or manganese batteries.

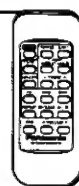
## Remote control unit's operation range

Remote control signal sensor (SENSOR)



Face about 7 meters in front of the sensor

Transmission window



## How to use the remote control unit properly

- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of an inverter fluorescent light.
- Take care to keep the remote control signal sensor and end of the remote control unit free from dust.

### To prevent malfunctioning of the remote control unit:

- Do not disassemble or remodel the unit.
- Do not place heavy objects on top of it.
- Do not leave it where it will be exposed to direct sunlight.
- Do not spill beverages or other liquids over it.

## Battery life

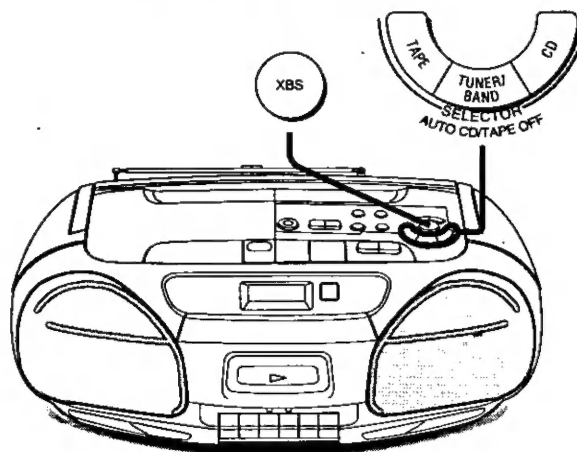
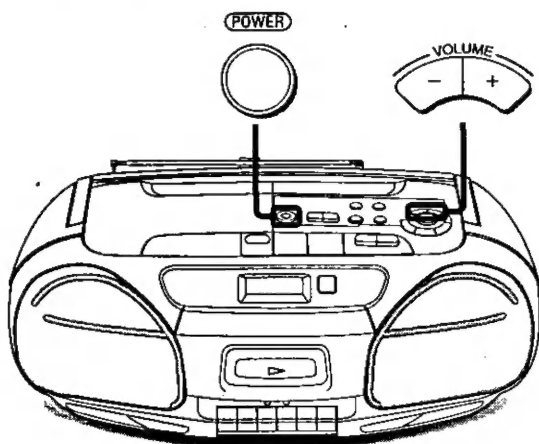
The battery life is about one year.

Although the battery life varies depending on how often the device is used, the batteries should be replaced on average about once every year.

The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when transmitter is held close to the front panel.

# Common Operations

## Basic operations



### Turning the Power ON/OFF

POWER



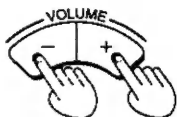
To turn the power ON:  
Press **POWER**.

POWER



To turn the power OFF:  
Press **POWER**.

### Adjusting the volume



Press **VOLUME** to adjust the volume to the desired level.

- +: Press this to turn up the volume.
- : Press this to turn down the volume.

The volume level can be adjusted from "0" (lowest) to "50" (highest).

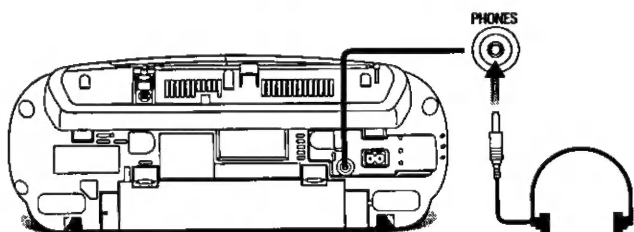
#### Reference

Only when a household AC outlet is used for the unit, the volume can be adjusted even when the unit's power is turned off.

### To listen through headphones (not included)

Turn down the volume and connect the headphones to the **PHONES** jack.

- Avoid listening for prolonged periods of time to prevent hearing damage.
- Plug type used: Stereo mini



### To listen to the radio



Press **TUNER/BAND**.

### To listen to CDs



Press **CD**.

### To listen to tapes



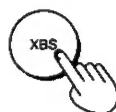
Press **TAPE**.

#### References

- Only when a household AC outlet is used for the unit, you can turn the power on by pressing TUNER/BAND, CD or TAPE button.
- Only when a household AC outlet is used for the unit, you can turn the power on by the remote control transmitter.
- You can operate by pressing the same button on the remote control transmitter.

### Adjusting the deep-bass (XBS)

When the XBS level control is adjusted, the level of the dynamic low frequency sound range is boosted.



Press **XBS**.

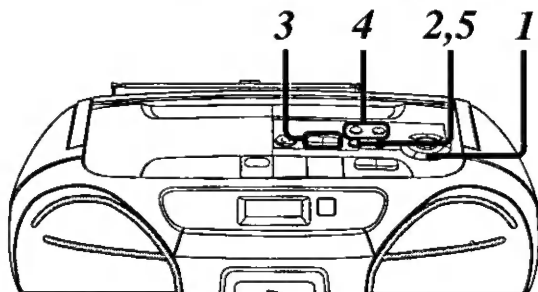
The display changes each time the button is pressed.





# Programming Broadcast Stations

Once broadcast stations have been programmed, they can easily be tuned in at the touch of a button on the unit or on the remote control. (Up to ten FM and AM stations each can be programmed in the preset channels.)



**Example:**  
**Programming FM 88.1 MHz in preset channel 1;**  
 (Using the main unit)

**1** **Press TUNER/BAND to display FM.**  
  
 (The display changes each time the button is pressed.)

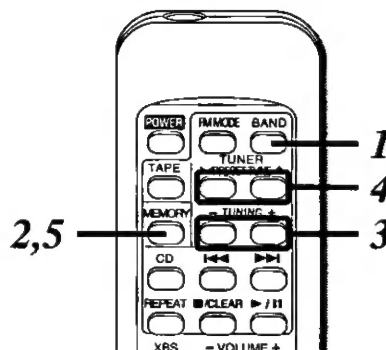
**2** **Press MEMORY.**  
 Program indicator flashes

**3** **During program indicator (PGM) is flashing; Press PRESET TUNING to select the preset channel.**  
 The preset channel selected now appears on the display.  
 Preset Channel

**4** **During program indicator (PGM) is flashing; Press TUNING - or + to tune in the broadcast station.**

**5** **Press MEMORY.**  
  
 The program indicator will stop flashing. FM 88.1 MHz was programmed in preset channel 1.

Repeat steps 2 to 5 to program the other stations.



(Using the remote control)

**1** **Press BAND to display FM.**  
  
 (The display changes each time the button is pressed.)

**2** **Press MEMORY.**

**3** **During program indicator (PGM) is flashing; Press TUNING - or + to tune in the broadcast station.**

**4** **During program indicator (PGM) is flashing; Press ∇ PRESET TUNE ∆ to select the preset channel.**

**5** **Press MEMORY.**

Repeat steps 2 to 5 to program the other stations.

## Programming AM stations:

1. Press the button in step 1 to display AM.
2. Perform steps 2 to 5 on the unit or the remote control.

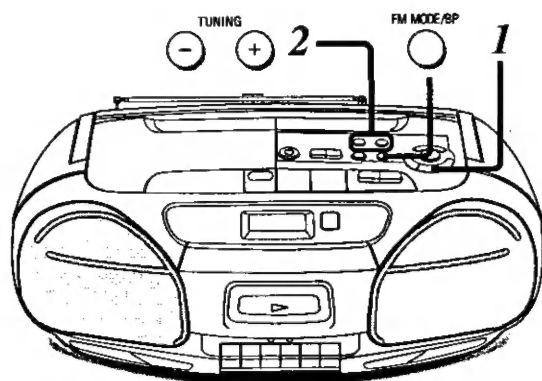
## Selecting the stations automatically: (FM stations only)

Keep pressing TUNING - or + until the frequency display starts to change. Release the button. A station with good reception is automatically selected and the selection process then stops.

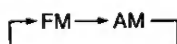
**To stop the selection at any time:**  
 Press TUNING - or + again.

# Listening to a Radio Broadcasts

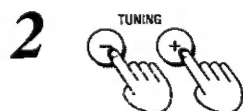
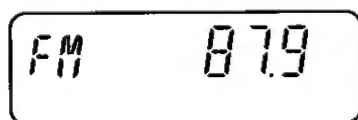
## Listening to broadcast stations which have not been programmed (Manual tuning)



**Press TUNER/BAND to display FM or AM.**



(The display changes each time the button is pressed.)



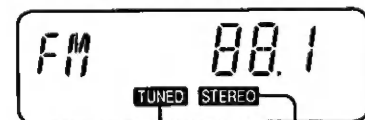
**Press TUNING – or + to tune in the broadcast station.**

+: Press this to increase the broadcast frequency.

–: Press this to decrease the broadcast frequency.

Keep the button depressed until the frequency display starts to change. Release the button, a station with good reception is automatically selected and the selection process then stops.

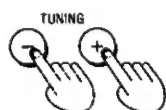
(Automatic tuning for FM station only)



Lights when a station is tuned in  
(It may not light if the signals of the station are weak.)

Lights when an FM stereo broadcast is tuned in

**To stop the automatic tuning at any time:**



**Press TUNING – or + again.**

### Frequency display steps:

The frequency display changes in the following steps:

FM: 200 kHz/100 kHz step

AM: 10 kHz step

## FM allocation setting

This unit comes equipped with an electronic digital tuner that divides the broadcast band into many small steps. These steps match the assignable broadcast frequencies and the intervals in between. This unit can receive FM broadcasts allocated in 200 kHz steps. It may not be able to receive some stations whose frequencies fall within the 200 kHz allocation. By adjusting the allocation, you can enable this unit to receive FM broadcasts allocated in 100 kHz steps.

(Available only from the main unit)

1. Press and hold TUNER/BAND for approximately 5 seconds.  
The frequency display will be returned to the minimum frequency of the FM band and the display will begin to flash. Keep holding for approximately 5 more seconds.
2. When the display stops flashing and indicates a different frequency number, release TUNER/BAND.

To return to the original frequency, repeat steps 1 to 2 above.

### Note

After changing the "allocation" setting, the frequencies you previously preset into the memory will be cleared.

## Adjusting the antennas

### For FM reception:

Pull out the telescopic antenna and adjust its length and angle for optimum reception.

### For AM reception:

Turn the unit in the direction which gives the best results.

### Reference

Radio broadcasts may be hard to receive in a moving vehicle or building because their signals are weak. Whenever possible, use the unit by a window.

## When an FM stereo broadcast is accompanied by too much noise

Reduce the interference by setting the sound to monaural.

### Example:

While an FM stereo program is being received;

(Available also from the remote control)



**Press FM MODE/BP.**



Lights

To return to stereo reception, repeat the same procedure and turn off the **MONO** display.

### Note

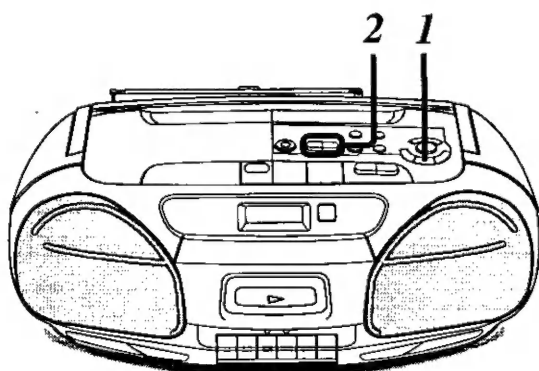
The **STEREO** display will not light in the monaural mode even when a stereo broadcast is received.



# Listening to tapes

## Listening to programmed stations (Preset tuning)

Make sure you have completed the procedure for "Programming Broadcast Stations" (on page 7) first.



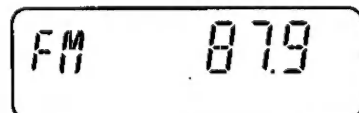
(Available also from the remote control)

**1** Press **TUNER/BAND** to display FM or AM.

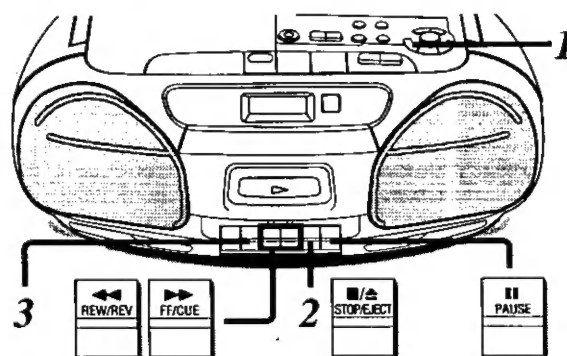
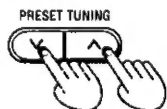


FM → AM

(The display changes each time the button is pressed.)



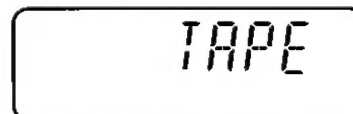
**2** Press **PRESET TUNING** to select the programmed station.



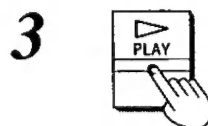
(Available only using the main unit)  
Only normal tapes (TYPE I) can be used.



Press **TAP**.



Press **STOP/EJECT**, and insert the tape to be played.



Press **PLAY** to start play.

**To stop play:**  
Press **STOP/EJECT**.

### Reference

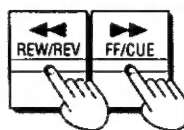
If you leave the unit in the stop mode for about four minutes, it will automatically turn itself off.

**To temporarily stop play:**

Press **PAUSE**.

To resume play, press **PAUSE** again.

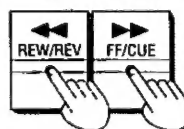
## To fast forward or rewind the tape



In the stop mode, press **REW/REV** or **FF/CUE**.

Do not press **PLAY** during rewinding or fast forwarding, as this may jam the tape. Be sure to press **STOP/EJECT** before proceeding to the next operation.

## To search a particular spot on a tape



During playback, press **REW/REV** or **FF/CUE**.

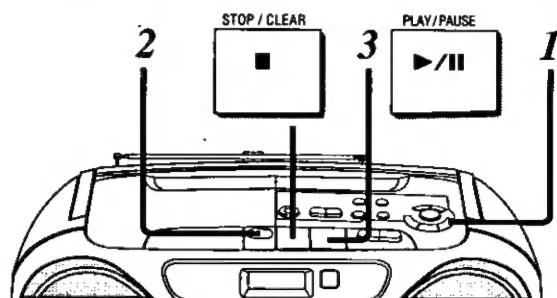
Tape play is resumed when the button is released.

**Type of tape which can be played on this unit:**

Normal position/TYPE I	○
High position/TYPE II	×
Metal position/TYPE IV	×

This unit will not be able to do full justice to characteristics of high-position tapes and metal position tapes even if they are played back.

# Listening to Compact Discs

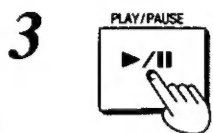
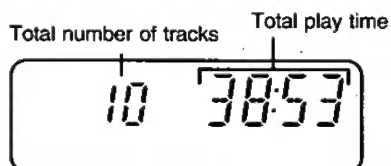


## Press CD.

"CD" appears on the display.  
(When the disc lid is opened, "CD" appears also.)  
"NO DISC" appears on the display when a CD has not been inserted.

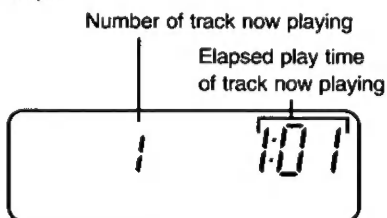


## Press CD ▲, insert the CD with its label side facing up.



## Press PLAY/PAUSE ►/II to start play.

Play starts from track 1 and continues to the last track, after which it automatically stops.



### To stop play:



## Press STOP/CLEAR ■.

### To stop play temporarily:



## Press PLAY/PAUSE ►/II.

The elapsed play time indication now flashes.

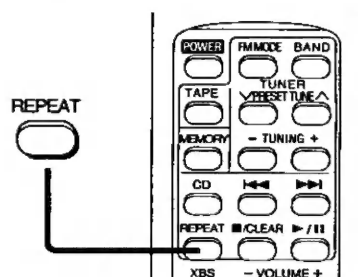
To resume play:  
Press PLAY/PAUSE ►/II.

### Note

Interference may affect radio or TV reception when CDs are played close to a radio or TV set. If this occurs, place the unit as far away from the set as possible.

### Reference

If you leave the unit in the stop mode for about four minutes, it will automatically turn itself off.



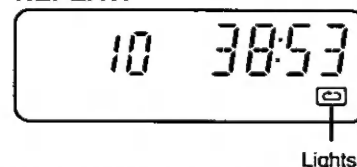
## Playing a CD or particular track repeatedly (Repeat play)

(Available only from the remote control).

All the tracks or the programmed tracks are played repeatedly.



### In the play or stop mode, press REPEAT.



### To release repeat play: Press REPEAT.

### To listen to the same track over and over again:

Program the track to be repeated (see page 11) and press REPEAT.

## Skipping to the beginning of a track



(Forward)



(Backward)

### In the play or stop mode, press SKIP/SEARCH ◀◀ or ▶▶.

Press the same button repeatedly to skip tracks in the number that corresponds to the number of times you pressed the button.

When either button is operated in the stop mode, only the track number will be indicated.

In the stop mode, to play from the indicated track, press PLAY/PAUSE ►/II.

### Reference

During program play (see page 11), play skips forward or backward to the tracks in their programmed sequence.

## Rapid forwarding and reversing (Search)



(Forward)



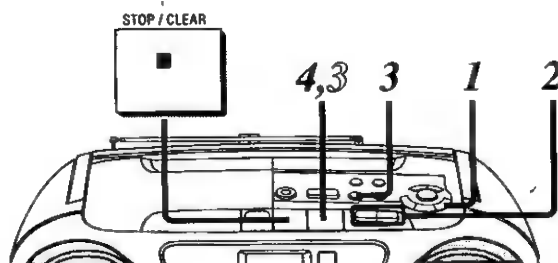
(Backward)

### During play, keep pressing SKIP/SEARCH ◀◀ or ▶▶.

Release the button at the desired position.

### Reference

During program play (see page 11), rapid forwarding or reversing is possible only within the track now playing.

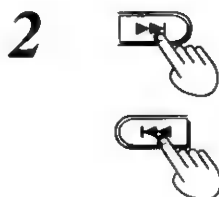


## Selecting and listening to your favorite tracks (Program play)

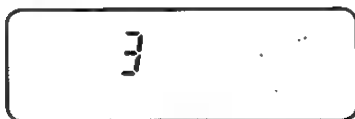
Up to 16 tracks can be programmed.  
(Available also from the remote control)



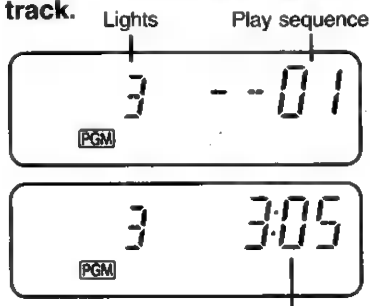
Press CD.



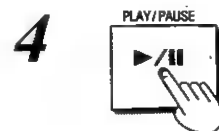
Press SKIP/SEARCH ◀◀ or ▶▶ to select your desired track.



Press MEMORY to program the track.



Total play time of programmed tracks  
To program other tracks as well, repeat steps 2 and 3.



Press PLAY/PAUSE ▶/|| to start play.

The tracks are now played in the programmed sequence, after which play will stop automatically.

To release program play:



In the stop mode, press STOP/CLEAR ■.

**When “--:--” appears:**

This means that the total play time of the programmed tracks has exceeded 120 minutes. Tracks can still be programmed and played.

**When “FULL” appears:**

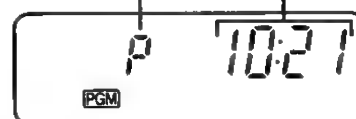
This means that an attempt has been made to program 17 tracks. No more tracks can be programmed.

## Reference

### Memory retention of programmed tracks:

The programming of the tracks will be retained in the memory even if play is stopped at any time or the power is turned off.

This indicates that the track programming is retained      Total play time of programmed track



### To check what has been programmed:

While the above display is on, press ◀◀ or ▶▶.

The programmed track numbers and the play sequence will now appear.

The programming is cleared by opening the disc lid.

## Starting CD play from a desired track (Direct play)

Example:

Starting disc play from track 8;

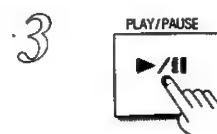
(Available also from the remote control)



Press CD.



Press SKIP/SEARCH ◀◀ or ▶▶ to display track “8”.

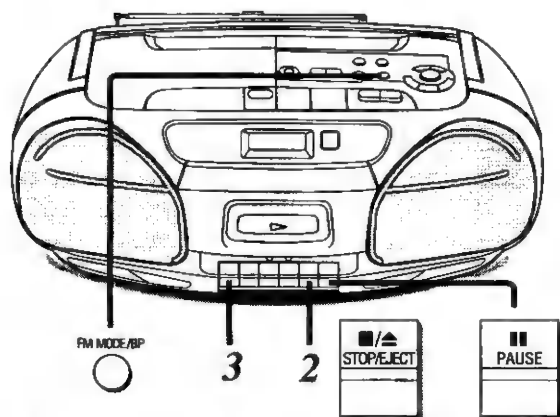


Press PLAY/PAUSE ▶/|| to start play.



All the tracks starting from the one selected and ending with the last track are played in sequence, and play automatically stops.

# Recording Radio Broadcast



(Available only using the main unit)  
Only normal tapes (TYPE I) can be used.  
Preparation: Take up the leader tape before proceeding.

**1** Tune in the broadcast station.  
(See page 8)

**2** Press STOP/EJECT and load the tape.  
Load the tape with the side to be recorded facing you.

**3** Press REC.

## To stop the recording:

Press STOP/EJECT.

## To stop the recording temporarily:

Press PAUSE.

To resume recording, press PAUSE again.

## Type of tape which can be used for recording:

Normal position/TYPE I	○
High position/TYPE II	×
Metal position/TYPE IV	×

The sound may not be recorded properly, if high-position tapes and metal position tapes are used with this unit.

## References

- Any change made to the volume or XBS level during recording will not affect the recording.
- In order to prevent trouble caused by flat batteries, it is recommended that you either supply power to the unit from the household AC outlet or replace all the batteries with new ones when you are recording something which is important to you.

## When too much noise is heard while recording an AM broadcast:

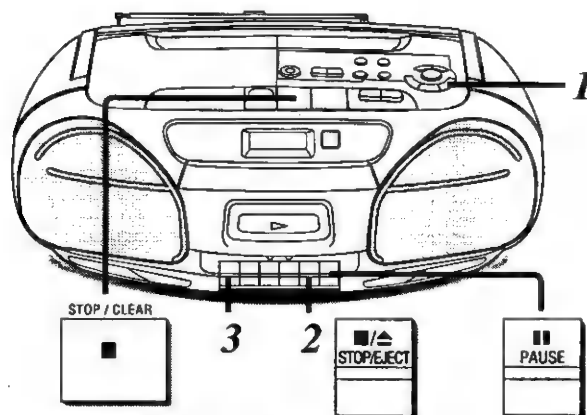


Press **FM MODE/BP** to whichever position yields less noise.

The display changes each time the button is pressed.



# Recording Compact Discs



(Available only using the main unit)  
Only normal tapes (TYPE I) can be used.  
Preparation: Insert the CD. Take up the leader tape before proceeding.

**1** Press CD.

**2** Press STOP/EJECT and load the tape.  
• Load the tape with the side to be recorded facing you.  
• Either have the leader tape wound up in advance or locate the position where recording is to begin.

**3** Press REC to start recording on the tape.  
CD play starts simultaneously.

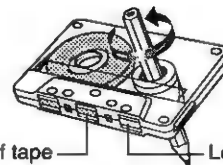
## To stop the recording:

Press STOP/CLEAR and STOP/EJECT.

## Note

If the unit is brought near a TV set during recording, noise may be recorded due to the effects of the signals from the TV set. Maintain a distance of at least 1.5 meters between the unit and a TV set.

## To take up the leader tape:



Magnetic part of tape  
(Recording can be made.)

Leader tape  
(Recording cannot be made.)

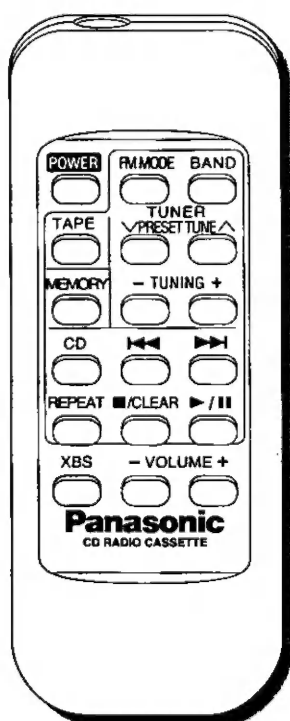
## To erase sound previously recorded on a tape:

Recording new sound onto a pre-recorded tape automatically erases what was previously recorded.

## To erase all the sound on a tape:

- Load the tape with the side whose recording is to be erased facing you.
- Press TAPE.
- Press REC.

# Quick Reference Guide to Remote Control Operations



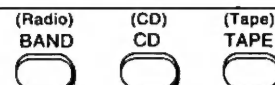
## Common operations

Turning the power on/off  
(when a household power outlet is used)

Unit-off only when the unit is  
powered by dry batteries.



Selecting the input sound source



Adjusting the volume

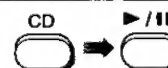


Adjusting the XBS level



## CD operations

Starting play (See page 10.)  
Temporarily stopping play (See page 10.)



Stopping play (See page 10.)



To skip tracks (See page 10.)  
To search forward or backward (See page 10.)



Listening from a particular track (See page 11.)



Programming and listening to favorite tracks  
(See page 11.)



To release program play (See page 11.)

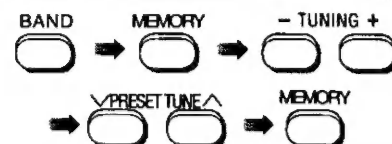


Listening to a track repeatedly (See page 10.)



## Tuner operations

Programming and listening to a favorite radio station  
(See page 7.)



Listening to a programmed radio station  
(See page 9.)



Listening to a radio station which has not been  
programmed (See page 8.)



To reduce the interference during an FM stereo  
broadcast (See page 8.)



# Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

(In U.S.A. consult MSC Authorized Servicenters for detailed instructions or call 1-800-545-2672 for the address of an authorized factory servicenter.)

Problem	Probable cause(s)	Suggested remedy	Page
---------	-------------------	------------------	------

## Common problems

No operation when the unit is powered by dry batteries.	Is the AC mains lead still connected to the unit while batteries are being used?	Disconnect the AC power cord.	4
	Are the batteries flat?	Replace them with new ones. Alternatively, use a household AC outlet as the power source.	4
	Have the batteries been installed incorrectly with their (+) and (-) polarities reversed?	Align the (+) and (-) polarities properly.	4
"U01" appears.	Are the batteries flat?	Replace them with new ones. Alternatively, use a household AC outlet as the power source.	4
"U02" appears.	Have the preparations been made to supply power to the unit?	Install the batteries or connect the power cable.	4
	When the memory back-up batteries have not been installed, "U02" does not appear.		4

## While listening to CDs

Play does not start. No display of track numbers, etc.	Has the CD been installed upside down?	Install the CD with the label side facing up.	10
	Has condensation formed on the unit's CD section?	Turn the unit on and leave it on for about an hour before further operation.	
Certain sections are not played properly.	Is the CD dirty?	Wipe with a soft cloth.	15
	Is the CD scratched?	Replace with a new CD.	

## While listening to tapes

Tape is not ejected.	Are the batteries flat?	Replace them with new ones or, alternatively, use a household AC outlet as the power source and then perform the operation once again.	4
No recording.	Has the tape's accidental erasure-prevention tabs been broken off?	Cover the holes with adhesive tape.	15
High level of noise; poor sound quality.	Are the heads dirty?	Clean them.	16
	Have the heads been magnetized?	Demagnetize them using a demagnetizer available from an audio store.	16

## While listening to the radio

High level of noise; stations cannot be tuned in well.	Has the antenna been adjusted properly?	Try changing its direction.	8
Noise heard during AM reception.	Are you using the remote controller of other appliances near the unit?	Use the remote controller at a distance.	
	Are you operating the unit and a TV set at the same time?	Place the unit at a distance from the TV. Alternatively, turn off the TV's power.	

## While using the remote control transmitter

No operation.	Are the batteries flat?	Replace them with new ones.	5
	Have the batteries been installed with their (+) and (-) polarities aligned properly?	Align the (+) and (-) polarities properly.	5
	Is the remote control transmitter pointed toward the unit's receiving sensor?	Check whether anything is obstructing the path between the remote control and the unit. Point the remote control properly at the unit's sensor, and operate.	5
	Is the unit's sensor exposed to direct sunlight, fluorescent light or another strong source of light?	Shield the sensor from strong sources of light.	5



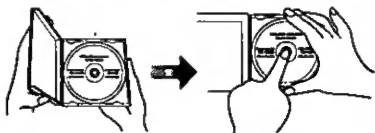
# Concerning Compact Discs

Only compact discs having this mark can be used with this unit.



## To remove a disc from its case

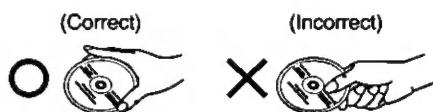
Press the center holder and lift the disc holding by the edges.



## To hold the disc

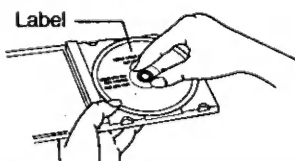
Hold the disc by the edges so the surface is not soiled with fingerprints.

Fingerprints, dirt and scratches can cause skipping and distortion.



## To store a disc in its case

Insert the disc with label facing upwards and press downward at the center.



## If the surface is soiled

Wipe gently with a soft, damp (water only) cloth.



## If the disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe off with a soft, dry, lint-free cloth before using the disc.

### Improper disc storage:

You can damage discs if you store them in the following places;

- Areas exposed to direct sunlight.
- Humid or dusty areas.
- Areas directly exposed to a heat outlet or heating appliance.

### Handling precautions:

- Do not write on the label side with a ball-point pen or other writing utensils.
- Do not use record cleaning sprays, benzene, thinner, static electricity prevention liquids or any other solvent.
- Do not soil with fingerprints.
- Do not attach paper or tape to discs.

# Concerning Cassette Tapes

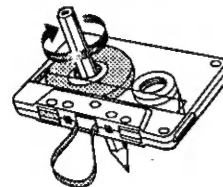
## Selection of cassette tapes

### Cassette tape exceeding 100 minutes:

These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

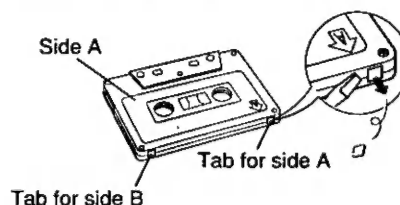
## If the tape loosens, take up the slack

Tape slack may cause the tape to break.

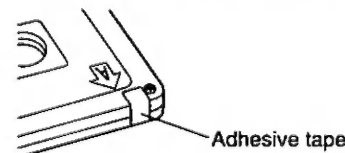


## To prevent erasure of recorded sounds

Remove the erase-prevention tabs with a screwdriver or a similar object.



To re-record on a protected cassette, cover the slot with adhesive tape.



### Improper tape storage:

You can damage tapes if you store them in the following places;

- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas.
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Areas exposed to direct sunlight.

# Product Service

Do not attempt to remove the cover(s) or repair the unit yourself. Refer servicing to qualified personnel only.

## Product information

For product service, product information or assistance with product operation, refer to the servicenter directory.

# Maintenance

## Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.

If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

Wring the cloth well before wiping the unit.

Wipe once again with a soft, dry cloth.

Never use alcohol, paint thinner, benzene, or chemically treated cloths to clean this unit. Such chemicals may damage the finish of your unit.

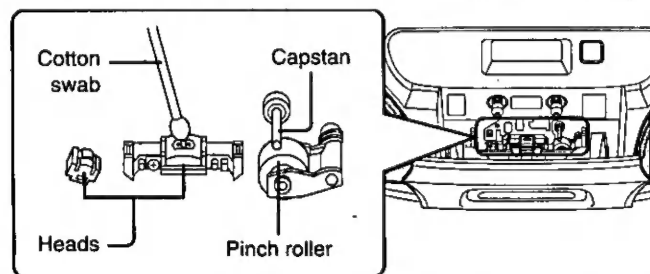
## Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

1. Open the cassette compartment cover by pressing **■/▲ STOP/EJECT**.

2. Clean the tape heads, pinch rollers and the capstan shafts with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol.

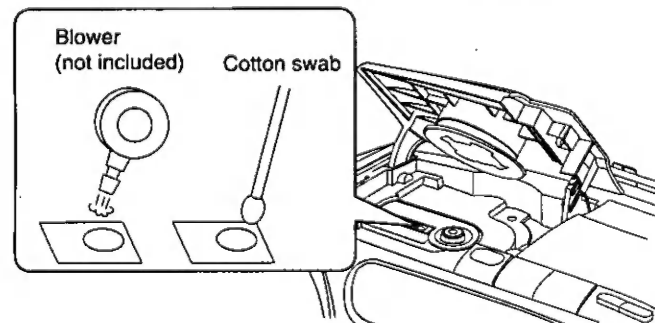
Do not use any solution other than alcohol for head cleaning.



It is recommended that the head assembly be demagnetized if distortion or poor sound quality persists after cleaning the heads. Demagnetize them using a demagnetizer available from an audio store.

## Lens care

Open the disc holder and clean the lens with a blower (not included). If the lens is extremely dirty, clean it with a cotton swab.



# Technical Specifications

## Radio

Frequency range

FM

87.9–107.9 MHz (200 kHz steps)

87.5–108.0 MHz (100 kHz steps)

AM

520–1710 kHz

## CD player

Sampling frequency

44.1 kHz

Decoding

16 bit linear

Beam source

Semiconductor laser (wavelength 780 nm)

No. of channels

2 channel, stereo

Wow and Flutter

Less than possible measurement data

D/A converter

MASH (1 bit DAC)

## Tape recorder

Track system

4 track, 2 channel, stereo

Recording system

AC bias

Erasing system

Multi pole magnet

Monitor system

Variable sound monitor

Frequency range

Normal

50–14,000 Hz

## General

Power requirement

AC

120 V, 60 Hz

Power consumption: 24 W

Battery

12 V (Eight "D" size, R20/LR20 batteries)

Memory Back-up for computer

6 V

(Four "AA" size, R6/LR6 batteries)

Speakers

10 cm (4") x 2

Jacks

Output

Headphones; 32  $\Omega$

Dimensions (WxHxD)

470 x 178 x 259 mm

(18<sup>1</sup>/<sub>2</sub>" x 7" x 10<sup>3</sup>/<sub>16</sub>" )

Weight

3.8 kg (8 lb 6 oz.) without batteries

## Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

MASH is a trademark of NTT.

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